SHUPINSKAYA, Mariya Dmitriyevna; KAtPOVICH, Vera Nikiforovna; VINOGRADOV, V.M., red.; BUGROVA, T.I., tekhn. red.

[Pharmacognosy] Farmakognoziia. Izd.3., perer. i dop. Leningrad, Medgiz, 1963. 365 p. (MIRA 17:1)

SHUPKALIN, A.V.

Ekonomika Sovetskoy knizhnoy torgovli; sushchnost', znacheniye i osnovy planirovaniya [by] A.P. Kuznetsov [i] A.V. Shupkalin. Moskva, Gos. Izd-vo "Iskusstvo", 1961.

131 p.

Bibliographical footnotes.

SHUPLETSOV.

Aurora borealis in Ul'yanovsk. Astron.tsir. no.209:42 Mr '60.
(MIRA 13:9)

(Auroras)

SHUPLETSOV, V. (Kirovskaya obl.)

Bending of pipes. Radio no.2:40 F '63. (MIRA 16:2)
(Pipe)

VORONIN, Ye.S., nauchnyy sotrudnik; SHUPLIKO, A.N., mladshiy nauchnyy sotrudnik; KHARLAMOV, K.M., veterinarnyy vrach

Phagoprophylaxis and phagotherapy of toxic dyspepsia in calves. Veterinariia 41 no.2:70-72 F '64. (MIRA 17:12)

1. Gosudarstvennyy kontrol'nyy institut imeni Taraseviche (for Voronin). 2. Gosudarstvennyy nauchno-kontrol'nyy institut Ministerstva sel'skogo khozyaystva SSSR (for Shupliko). 3. Sovkhoz "Ramenskoye", Moskovskoy oblasti (for Kharlamov).

MALYAVIN, A.G., kand.veter.nauk; SOLOV'YEVA, V.S., kand. veter.nauk;
SHUPLIKO, A.N., mladshiy nauchnyy sotrudnik

Specific activity of polyvalent leptospirosis vaccine.
Veterinariia 42 no.11:37-39 N '65.
(MIRA 19:1)

1. Gosudarstvennyy nauchno-kontrol'nyy institut veterinarnykh preparatov.

SOSOV, R.F., prof.; KOVBA, P.Ya., assistant; SHUPLIKO, N., mladshiy nauchnyy sotrudnik

Etiologic and epizootiological importance of Leptospira from the L. hebdomadis serogroup. Veterinariia 42 no.9:28-30 S '65. (MIRA 18:11)

1. Moskovskaya veterinarnaya akademiya (for Sosov, Kovba).
2. Gosudarstvennyy nauchno-kontrol'nyy institut veterinarnykh preparatov (for Shupliko).

SHUPLOV, V.I., kandidat tekhnicheskikh nauk.

Interurban automatic telephone. Nauka i zhizn' 20 no.8:34 Ag '53.
(MLRA 6:8)
(Telephone, Automatic)

BRYLEYEV, A.M., laureat Stalinskoy premii, inzhener; GAMBURG, Ye.Yu., inzhener, retsenzent; GOLOVKIN, M.K., inzhener, retsenzent; KAZAKOV, A.A., kandidat tekhnicheskikh nauk, retsenzent; KUT'IN, I.M., dotsent, kandidat tekhnicheskikh nauk, retsenzent; LEONOV, A.A., inzhener, retsenzent; SEMENOV, N.M., laureat Stalinskoy premii, inzhener, retsenzent; CHERNYSHEV, V.B., inzhener, retsenzent; VALUYEV, G.A., inzhener, retsenzent; METTAS, N.A., laureat Stalinskoy premii, inzhener, retsenzent; NOVIKOV, V.A., dotsent, retsenzent; PIVOVAROV, A.L., inzhener, retsenzent; POGODIN, A.M., inzhener, retsenzent; KHODOROV, L.R., inzhener, retsenzent; PIVOVAROV, A.L., inzhener, retsenzent; POGODIN, A.M., inzhener, retsenzent; KHODOROV, L.R., inzhener, retsenzent; SHUPLOV, V.I., kandidat tekhnicheskikh nauk, retsenzent; KLYKOV, A.F., inzhener, retsenzent; YUDZON, D.M., tekhnicheskiy redaktor; VERINA, G.P., tekhnicheskiy redaktor.

[Technical handbook for railroad men] Tekhnicheskii spravochnik zheleznodorozhnika. Vol. 8. [Signaling, central control, block system, and communication] Signalizatsiia, tsentralizatsiia, blokirovka, sviaz'. Red. kollegiia A.F.Baranov [i dr.] Glav.red. E.F.Rudoi. Moskva, Gos. transp. zhel-dor. izd-vo, 1952. 975 p. (Card 2) (MLRA 8:2)
(Railroads--Signaling) (Railroads--Communication systems)

BARANOV, A.F., redaktor; BIZYUKIN, D.D., redaktor; VAKHNIN, M.I., otvetstvennyy redaktor toma, professor, doktor tekhnicheskikh nauk; VEDENISOV, B.N., redaktor; IVLIYEV, I.V., redaktor; MOSHCHUK, I.D., redaktor; RUDOY, Ye.F., glavnyy redaktor; SOKOLINSKIY, Ya.I., redaktor; SOLOGUBOV, V.N., redaktor; SHILEVSKIY, V.A., redaktor; ALFEROV, A.A., inzhener; ANASHKIN, B.T., inzhener; AFANAS'YEV, Ye.V., laureat Stalinskoy premii, inzhener; BELENKO, K.M., dotsent; BORISOV, D.P., dotsent, kandidat tekhnicheskikh nauk; ZHIL'TSOV, P.N., inzhener; ZBAR, N.R., inzhener; IL'YENKOV, V.I., dotsent, kandidat tekhnicheskikh nauk; KAZAKOV, A.A., kandidat tekhnicheskikh nauk; KRAYZMER, L.P., kandidat tekhnicheskikh nauk; KOTLYARENKO, N.F., dotsent, kandidat tekhnicheskikh nauk; MAYSHEV, P.V., professor, kandidat tekhnicheskikh nauk; MARKOV, M.V., inzhener; NELEPETS, V.S., dotsent, kandidat tekhnicheskikh nauk; NOVIKOV, V.A., dotsent; ORLOV, N.A., inzhener; PETROV, I.I., kandidat tekhnicheskikh nauk; PIVKO, G.M., inzhener; POGODIN, A.M., inzhener; RAMLAU, P.N., dotsent, kandidat tekhnicheskikh nauk; ROGINSKIY, V.N., kandidat tekhnicheskikh nauk; RYAZANTSEV, B.S., laureat Stalinskoy premii, dotsent, kandidat tekhnicheskikh nauk; SNARSKIY, A.A., inzhener; FEL'DMAN, A.B., inzhener; SHASTIN, V.A., laureat Stalinskoy premii, inzhener; SHUR, B.I., inzhener; GONCHUKOV, V.I., inzhener, retsenzent; NOVIKOV, V.A., dotsent, retsenzent; AFANAS'YEV, Ye.V., laureat Stalinskoy premii, retsenzent;

[Technical handbook for railroad men] Tekhnicheskii spravochnik zheleznodorozhnika. Vol. 8. [Signaling, central control, block system, and communication] Signalizatsiia, tsentralizatsiia, blokirovka, sviaz'. Red. kollegiia A.F.Baranov [i dr.] Glav.red. E.F.Rudoi. Moskva, Gos. transp. zhel-dor. izd-vo, 1952. 975 p. (Continued on next card)

SHUPLOV, V.I., kandidat tekhnicheskikh nauk; VOLOTSKOY, A.N., inzhener; DEREVYANKO, N.S., kandidat tekhnicheskikh nauk; KUDINOV, V.V., inzhener; STROGANOV, L.P., inzhener, redaktor; VERINA, G.P., tekhnicheskiy redaktor.

[Automatic telephone communication in railroad transport] Avtomaticheskaia telefonnaia sviaz' na zheleznodorozhnom transporte. Moskva, Gos.transp.zhel-dor. izd-vo, 1956. 173 p. (Moscow. Vsesoiuznyi nauchno-issledovatel'skii institut zheleznodorozhnogo transporta. Trudy, no. 118). (MLRA 9:10)
(Railroads--Communication systems)
(Telephone, Automatic)

KOZLOV, Vladimir Alekseyevich; KUDINOV, Valentin Vladimirovich; POLUSHKIN, Vsevolod Alekseyevich; SHUPLOV, Vyacheslav Ivanovich; SUKHORUKOV, P.A. red.; DIZHUR, I.M., red.izd-va; TIKHONOVA, Ye.A., tekhn.red.

[Fire alarm systems and temperature control for seagoing ships] Pozharnaia signalizatsiia i temperaturnyi kontrol' na morskom transporte. Moskva, Izd-vo "Morskoi transport," 1957. 118 p. (MIRA 11:2)

(Ships--Fires and fire prevention)

LUPAL, Nikolay Vasil'yevich; BOSIN, Matvey Itskovich; PEREBOROV, Aleksandr Sergeyevich; SMIRNOVA, Appolinariya Vasil'yevna; Myler, Aleksandr Aleksandrovich; TSUKANOV, T.T., kand. tekhn.nauk, retsenzent; SHUPLOV, V.I., kand.tekhn.nauk, retsenzent; GLUZMAN, I.S., kand.tekhn.nauk, red.; USENKO, L.A., tekhn.red.

[Theoretical principles of automatic and remote control] Teoreticheskie osnovy avtomatiki i telemekhaniki. By N.V. Lupal i dr. Moskva, Vses.izdatel'sko-poligr.ob"edinenie M-va putei soobshcheniia, 1961. 414 p.
(MIRA 14:12)

(Automatic control) (Remote control)

BESPALOV, Nikolay Vasil'yevich; VLADIMIROV, Pavel Fedorovich; MALKIS Iosif Solomonovich; SHUPLOV, Vyacheslav Ivanovich; KOZLOV, S.S., red.; VRONSKIY, L.N., ved. red.

[Communications in pipeline transportation] Sviaz' na truboprovodnom transporte. Moskva, Izd-vo "Nedra," 1964. 198 p. (MIRA 17:8)

SHUPLYAKOV, S.

Promote the introduction of advanced experience. Avt. transp. 42 no.8:1-3 Ag '64. (MIRA 17:10)

1. Zamestitel' ministra avtomobil'nogo transporta i shosseynykh dorog RSFSR.

SHUPLYAKOV, I.D.

Our contribution to the development of animal husbandry.
Veterinariia 42 no.7:9-10 Jl '65. (MIRA 18:9)

1. Glavnyy veterinarnyy vrach Rostovskogo upravleniya sel'skogo khozyaystva Yaroslavskoy oblasti.

SHUPLYAKOV, S.

International cooperation of highway transport workers. Za rul. no.10: 22 O '57. (MIRA 10:11)

1. Zamestitel' ministra avtomobil'nogo transporta RSFSR, rukovoditel' Sovetskoy delegatsii na pervoy mezhdunarodnoy konferentsii rabotnikov avtotransporta sotsialisticheskikh stran v Sofii i Varne, Bolgariya. (Highway transport workers)

SHUPLYAKOV, S.

Improve the quality of automobile repairs. Avt. transp. 35 no.8: 1-2 Ag '57. (MLRA 10:9)

1. Zamestitel' Ministra avtomobil'nogo transporta i shosseynykh dorog RSFSR.

(Automobiles--Maintenance and repair)

SHUPLYAKOV, S.

Further technical development. Avt. transp. 37 no.2:1-2 F '59.
(MIRA 13:1)

1.Zamestitel' ministra avtomobil'nogo transporta i shosseynykh dorog RSFSR.
(Transportation, Automotive)

ALEKSANDROV, L.A.; AKSENOVA, Z.I.; ARTEM'YEV, S.P.; AFANAS'YEV, L.L.; BONSHTEYN, L.A.; BURKOV, M.S.; BUYANOV, V.A.; VELIKANOV, D.P.; VERKHOVSKIY, I.A.; GOBERMAN, I.M.; DAVIDOVICH, L.N.; DEGTEREVA, G.N.; ZEMSKOV, P.F.; KALABUKHOV, F.V.; KOLESNIK, P.A.; KOZHIN, A.P.; KRAMARENKO, G.V.; KRUZE, I.L.; KURSHEV, A.N.; OSTROVSKIY, N.B.; PASHINA, S.N.; SEMIKIN, N.V.; TARANOV, A.T.; TIKHOMIROV, A.K.; ULITSKIY, P.S.; USHAKOV, B.P.; FILIPPOV, V.K.; CHERNYAVSKIY, L.M.; CHUDINOV, A.A.; SHUPLYAKOV, S.I.; TIKHOMIROV, N.N.

Petr Valerianovich Kaniovskii; obituary. Avt.transp. 37 no.4:57 Ap '59. (MIRA 13:6)
(Kaniovskii, Petr Valerianovich, 1881-1959)

SHUPLYAKOV, Sergey Ivanovich; AFANAS'YEV, L.L., red.; GALAKTIONOVA, Ye.N., tekhn.red.

[Development of new equipment for automotive transportation and highway management] Razvitie novoi tekhniki na avtomobil'nom transporte i v dorozhnom khoziaistve. Moskva, Nauchno-tekhn.izd-vo M-va avtomobil'nogo transp. i shosseinykh dorog RSFSR, 1960. 118 p. (MIRA 13:11)
(Transportation, Automotive--Equipment and supplies)
(Road construction)

SHUPLYAKOV, S.

Technical development is the base for the growth of labor productivity. Avt.transp. 38 no.1:1-3 Ja '60. (MIRA 13:5)

1. Zamestitel' ministra avtomobil'nogo transporta i shosseynykh dorog RSFSR.
(Transportation, Automotive--Technological innovations)

SHUPLYAKOV, S.I

Carry out the decisions of the July Plenum of the Central Committee of the CPSU. Avt.transp. 38 no.8:1-3 Ag '60. (MIRA 13:8)

1. Zamestitel' ministra avtomobil'nogo transporta i shosseynykh dorog RSFSR.
(Transportation, Automotive)

ARTEM'YEV, S.P.; AFANAS'YEV, L.L.; BELOUSOV, I.I.; BENENSON, I.M.; BRONSHTEYN, L.A.; BUYANOV, V.A.; VELIKANOV, D.P.; VERKHOVSKIY, I.A.; GORINOV, A.V.; GOBERMAN, I.M.; DAVIDOVICH, L.N.; DEGTEREV, G.N.; ZVONKOV, V.V.; KALABUKHOV, F.V.; KOMAROV, A.V.; KUDRYAVTSEV, A.S.; LIV'YANT, Ya.A.; PETROV, A.P.; PETROV, V.I.; TARANOV, A.T.; TIKHOMIROV, N.N.; FEDOROV, V.F.; CHUDINOV, A.A.; SHUPLYAKOV, S.I.; YANKIN, Yu.S.

Anatolii Pavlovich Aleksandrov; obituary. Avt.transp. 38 no.9:57 S '60. (MIRA 13:9)

(Aleksandrov, Anatolii Pavlovich, 1903-1960)

SHUPLYAKOV, S.

Lenin's legacy lives and wins. Avt.transp. 40 no.4:1-2 Ap '62. (MIRA 15:4)

1. Zamestitel' ministra avtomobil'nogo transporta i shosseynykh dorog RSFSR.

(Transportation, Automotive)

SHUPLYAKOV, S.

Triumph of Lenin's ideas. Avt.transp. 41 no.4:1-2 Ap '63. (MIRA 16:5)

1. Zamestitel' ministra avtomobil'nogo transporta i shosseynykh dorog RSFSR.

(Lenin, Vladimir Il'ich, 1870-1924)
(Transportation, Automotive)

SHUPLYAKOV, S.

Objectives for the development of automotive transportation and the scientific and technical community. Avt. transp. 41 no.9: 1-3 S '63. (MIRA 16:10)

SHUPLYAKOV, S.; KUZNETSOV, V.

New developments in the organization of grain transportation. Avt. transp. 42 no.10:10-12 O '64. (MIRA 17:11)

1. Zamestitel' ministra avtomobil'nogo transporta i shosseynykh dorog RSFSR (for Shuplyakov). 2. Nachal'nik Volgogradskogo oblastnogo avtotransportnogo upravleniya (for Kuznetsov).

CHEPELEVSKIY, Vladimir Natanovich; TUMANOV, Ivan Alekseevich; SARKHOSH'YAN, Gurgen Nikitovich; RUMYANTSEV, Aleksey Nikolayevich; KLEVENSKIY, Aleksandr Iosifovich; BELOTSERKOVSKAYA, S.I., red.; SHUPLYAKOV, S.I., red.

[New developments in the technology and equipment used in motor-vehicle repair] Novoe v tekhnologii i oborudovanii dlia remonta avtomobilei. Moskva, Transport, 1964. 127 p. (MIRA 18:1)

SHUPLYAKOV, S.

Leninism is the banner of our victories. Avt. transt. 43 no.4: 1-2 Ap '65. (MIRA 18:5)

1. Zamestitel' ministra avtomobil'nogo transporta i shosseynykh dorog RSFSR.

SHUPLYAKOV, S.

New and advanced developments should be used in the mechanization of the maintenance and repair of motor vehicles. Avt. transp. 43 no.6:1-2 Je '65. (MIRA 18:6)

1. Zamestitel' ministra avtotransporta i shosseynykh dorog RSFSR.

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AUTHOR: Shuplyakov, V. S.

55
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ORG: none

TITLE: Some methods for recording and processing information in investigating the articulatory indices of speech

SOURCE: AN SSSR. Otdeleniye biologicheskikh nauk. Problemy kosmicheskoy biologii, v. 4, 1965, 614-618

TOPIC TAGS: data processing system, acoustic signal, acoustic theory, computer circuit, logic circuit

ABSTRACT: Speech dynamics were studied by electrically recording a number of indices of speech organ activity with a 16-channel pen-writing recorder and comparing the complex of articulatory parameters thus obtained with records of the speech itself, with the object of clarifying the amplitude-time relation between signals and obtaining various statistical data. This sort of analysis suffers from a number of serious defects: it is not only finicky and not very accurate, but in some cases is not even applicable. A system was therefore devised for automatically performing various time measurements and data processing to obtain a complex of signals reflecting all the phonetically important features of speech. All indices from various sensors were reduced to a single form, without loss of essential information. This was done by

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transforming the signals into square pulses with an amplitude selector and shaping circuit. Figs. 1 and 2 diagram the circuits used for processing articulatory parameter signals and controlling selection of input level to the logic circuit. All measured parameters treated in this way were obtained in binary form, processable by binary logic to yield arrays or rules of occurrence for the articulatory phenomena studied.

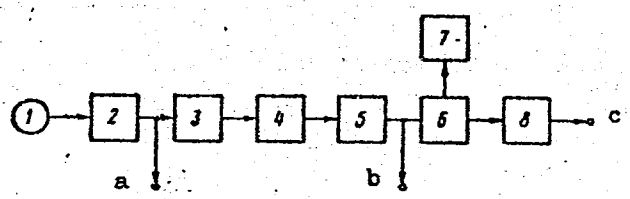

Fig. 1. Block-diagram of circuit for processing articulatory parameter signals

1 - Sensor; 2 - amplifier; 3 - phase inverter; 4 - detector; 5 - integrating circuit; 6 - amplitude selector; 7 - controlled current source; 8 - shaping circuit; a - output to level selector; b - output of pulse envelope to pen-writing recorder and level selector; c - output of shaped signal to logic processing circuit

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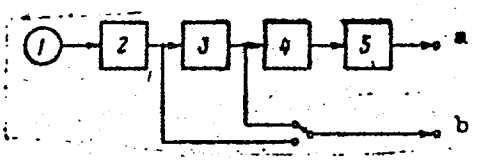


Fig. 2. Block-diagram of input level selection controller

1 - Sensor; 2 - phase-inversion amplifier; 3 - detector with integrating circuit; 4 - amplitude selector and shaping circuit; 5 - controlled illumination generator; a - output to oscilloscope brightness monitor; b - output to oscilloscope vertical amplifier.

For example, relatively simple logical relationships between measured parameters were obtained for the following pairs of labial and alveolar consonants: /p - b, t - d, s - z/ and their soft counterparts /p' - b', t' - d', s' - z'/, enabling voicing or voicelessness to be determined. Actual experiments may require more complex arrays of such simple elements, arranged in parallel or in series. For convenience in changing from one type of logic problem to another, the elements of the circuits are made uniform and interchangeable. [ATD PRESS: 4091-F]

SUB CODE: 09, 20 / SUBM DATE: none / ORIG REF: 003

Card 3/3

SHUPLYAKOV, V.S.

Some methods of recording and elaboration of information in studying articulation indices of speech. Probl. kosm. biol. 4:614-618 '65. (MIRA 18:9)

CHISTOVICH, L.A.; KOZHEVNIKOV, V.A.; ALYAKRINSKIY, V.V.; BONDARKO, L.V.; GOLUZINA, A.G.; KLAAS, Yu.A.; KUZ'MIN, Yu.I.; LISENKO, D.M.; LYUBLINSKAYA, V.V.; FEDOROVA, N.A.; SHUPLYAKOV, V.S.; SHUPLYAKOVA, K.M.

[Speech: Articulation and perception] Artikuliatsiia i vospriiatie. Moskva, Nauka, 1965. 240 p. (MIRA 18:2)

1. Akademiya nauk SSSR. Institut fiziologii im. I.P.Pavlova.

KOZHEVNIKOV, V.A.; SHUPLYAKOV, V.S.

Methods of simultaneous registering of articulatory and acoustic parameters of speech. Vop.psikhol. no.6:128-134 N-D '62. (MIRA 16:2)

1. Institut fiziologii imeni I.P.Pavlova AN SSSR, Leningrad.
(Speech) (Psychological apparatus)

CHISTOVICH, L.A.; KOZHEVNIKOV, V.A.; ALYAKRINSKIY, V.V.; BONDARKO, L.V.; GOLUZINA, A.G.; KLAAS, Yu.A.; KUZ'MIN, Yu.I.; LISENKO, D.M.; LYUBLINSKAYA, V.V.; FEDOROVA, N.A.; SHUPLYAKOV, V.S.; SHUPLYAKOVA, R.M.

[Speech: Articulation and perception] Artikuliatsiia i vospriiatie. Moskva, Nauka, 1965. 240 p. (MIRA 18:2)

1. Akademiya nauk SSSR. Institut fiziologii im. I.P.Pavlova.

SHUPNIK, M.A.

Clinical symptom of erythema nodosum. Pediatriia no.3:92 My-Je '54. (MLRA 8:1)

1. Iz terapevticheskogo otdeleniya rayonnoy bol'nitsy Vinnitskoy oblasti.
(SKIN--DISEASES)

SLADKOV, A.S., kand.tekhn.nauk; SHUPOV, L.P., inzh.

Use of screw separators for dressing iron ore slime. Gor. zhur. no.10:65-68 O '58. (MIRA 11:10)

1. Mekhanobrchermet. (Separators (Machines)) (Ore dressing)

KARMAZIN, V.I.; SHUPOV, L.P.; MARGULIS, V.S.

Centrifugal-impact crusher for the reduction of Krivoy Rog iron ores. Obog.rud. 5 no.2:35-37 '60. (MIRA 14:8)

1. Mekhanobrchermet.
(Krivoy Rog Basin--Iron ores) (Crushing machinery)

SHUPOV, L.P.

Use of electroosmosis for dewatering fine concentrates in settling sumps. Gor. zhur. no.12:59 D '60. (MIRA 13:12)

1. Mekhanobrchermet, Krivoy Rog. (Ore dressing) (Electroosmosis)

ZAIKIN, S.A.; KARMAZIN, V.I.; MARGULIS, V.S.; SHUPOV, L.P.

Improving crushing flowsheets in mining and ore-dressing combines. Gor. zhur. no.10:74-76 O '61. (MIRA 15:2)

1. Mekhanobrchermet, Krivoy Rog.
(Crushing machinery)

SHUPOV, L.P.

Using nomograms in recalculating parameters of the consistency of pulp. Gor. zhur. no. 12:51 D '61. (MIRA 15:2)

1. Mekhanobrchermet, Krivoy Rog.
(Iron ores)
(Ore dressing)
(Nomography(Mathematics))

SHUPOV, L.P.

Calculating closed cycles of crushing and grinding. TSvet. met. 35 no.6:14-18 Je '62. (MIRA 15:6)
(Ore dressing)

SHUPOV, L.P.

Water removal from fine magnetite concentrates in settling tanks and stock piles. Obog. rud no.6:46-49 '61. (MIRA 15:3)

1. Mekhanobrchermet.
(Magnetite) (Ore dressing)

ZAIKIN, S.A.; KARMAZIN, V.I.; SHUPOV, L.P.

Use of ball-free mills for the comminution of iron quartzites.
Obog. rud no.6:39-41 '61. (MIRA 15:3)

1. Mekhanobrchermet.
(Crushing machinery) (Iron ores)

SHUPOV, L.P., gornyy inzhener

Using the theory of probabilities and electronic digital computers in mineral dressing. Gor. zhur. no.1:62-64 Ja '62. (MIRA 15:7)

1. Mekhanobrchermet, Krivoy Rog.
(Ore dressing--Electronic equipment)
(Electronic calculating machines)
(Probabilities)

SHUPOV, L.P.

Ways of improving the filtration of finely ground iron ore concentrates in ore dressing combines. Met. i gornorud. prom. no.2 55-58 Mr-Ap '62. (MIRA 15:11)

1. Institut "Mekhanobrchermet", g. Krivoy Rog.
(Ore dressing) (Filters and filtration)

SHUPOV, L.P., gornyy inzhener

Theory and practice are inseparable. Gor. zhur. no.3:54-56 Mr '63. (MIRA 16:4)

1. Mekhanobrchermet, Krivoy Rog.

KARMAZIN, V.I., prof., doktor tekhn.nauk; SHUPOV, L.P.

Some problems in dewatering fine iron concentrates. Gor. zhur. no.9:56-59 S '63. (MIRA 16:10)

1. Dnepropetrovskiy gornyy institut (for Karmazin).
2. Mekhanobrchermet, Krivoy Rog (for Shupov).

SHUPOV, L.P.; BELONOZHKO, I.F.; GISHCHUK, B.V.; KONONOVA, A.P.; MASLENNIKOVA, K.P.; SVERDEL', E.I.; ARTEMOVA, A.A.

Selection of a synthetic fiber filter cloth for thin iron ore concentrators. Gor.zhur. no.10:60-62 O '64.
(MIRA 18:1)

1. Nauchno-issledovatel'skiy i proyektnyy institut po obogashcheniyu i aglomeratsii rud chernykh metallov, Krivoy Rog (for Shupov, Belonozhko, Gishchuk). 2. Ukrainskiy nauchno-issledovatel'skiy institut po pererabotke iskusstvennogo i sinteticheskogo volokna (for Kononova, Maslennikova). 3. Yuzhnyy gorno-obogatitel'nyy kombinat, Krivoy Rog (for Sverdel', Artemova).

BELONOZHKO, Ivan Fedorovich; SHUPOV, Leonid Petrovich;
MAKRUSHINA, Ye.A., ved. red.

[Filtration equipment operator] Fil'troval'shchik. Moskva, Nedra, 1965. 75 p. (MIRA 18:8)

SHUPOV, L.P.; BELONOZHKO, I.F.

Results of testing a drum vacuum-filter with a removable belt. Met. i gornorud. prom. no.3:67-69 My-Je '65. (MIRA 18:11)

MARGULIS, V.S.; SHUPOV, L.P.; OSTAPENKO, P.Ye.

Outlook for using counterflow jet-type mills in the mining industry. Gor. zhur. no.9:66-68 S '62. (MIRA 15:9)

1. Institut Mekhanobrchermet, Krivoy Rog.
(Milling machinery)

YANICHEK, G. [Janicek, G.]; POKORNY, Ya.; SHUPOVA, Y. [Supova, I.]

Influence of food products fried in fat on changes in its properties. Vop. pit. 20 no.6:12-17 N-D '61. (MIRA 15:6)

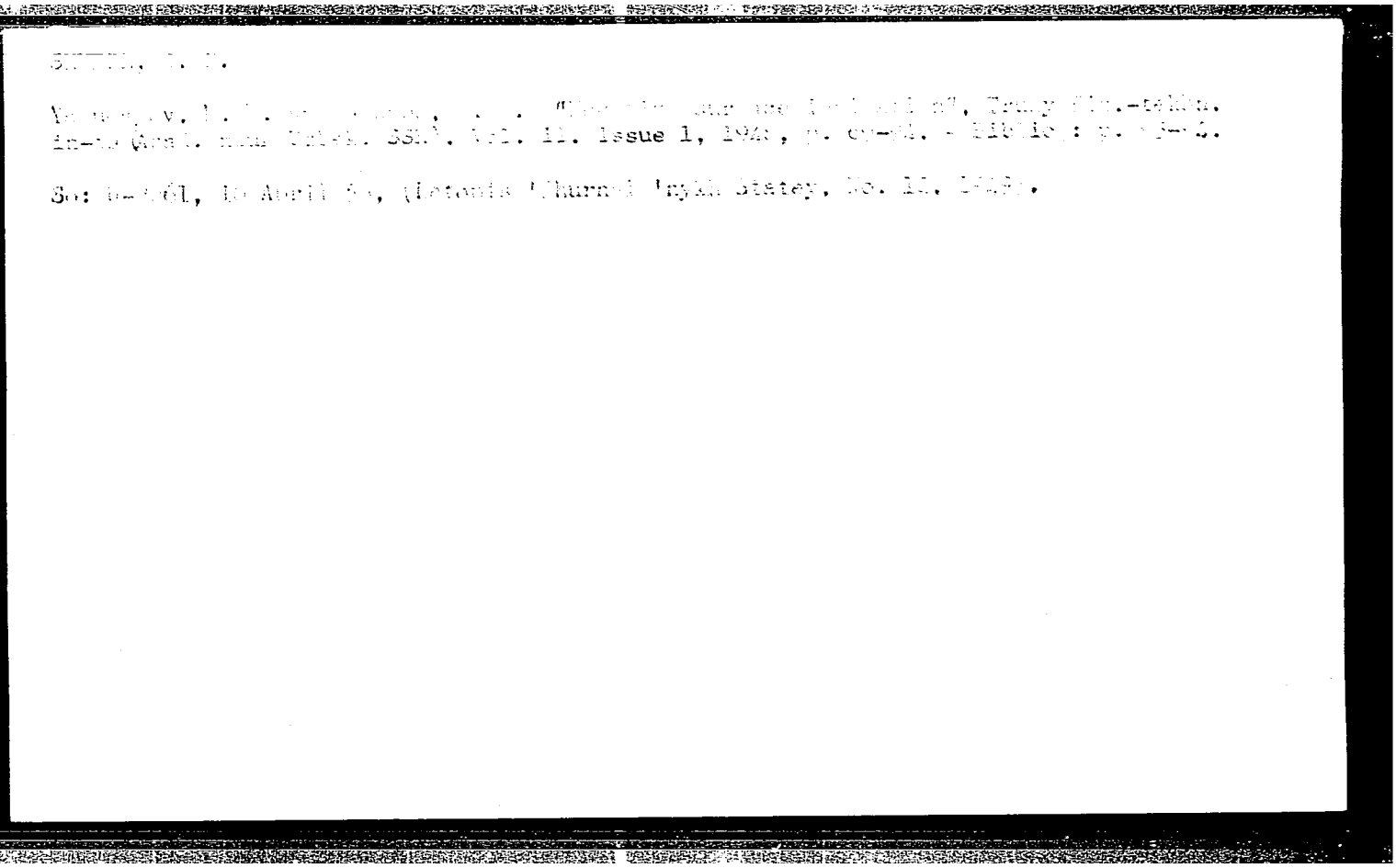
1. Iz kafedry khimii i issledovaniya pishchevykh produktov fakul'teta pishchevoy tekhnologii Khimiko-tekhnologicheskogo instituta, Praga, Chekhoslovatskaya Sotsialisticheskaya Respublika.

(OILS AND FATS)
(FOOD, FRIED)

[illegible], [illegible]

Arifov, U. [illegible] Zhurav[illegible], [illegible] "Positive surface ionization of [illegible] and molecules", Trudy Fiz.-tekhn. In-ta ([illegible] nauk U[illegible]. SSR), Vol. II, Issue [illegible], p. 1[illegible]-68, - Bibliog: p. [illegible]7-68.

So: U-3261, 1[illegible] April 53, (Letopis 'Zhurnal 'nykh Statey, No. 12, 1949).



SHUPPE, G.

USSR/Geology Jan/Feb/Mar 48

"Some Geochemical 'Ideas' of A. S. Chklonskiy," G. Shuppe, 2 pp

"Zapiski V-S Mineral Obshch" Vol LXXVII, No 1

Some ideas of Chklonskiy on understanding of a series of processes that occur in geology.

1/49T59

SHUPPE, G.N.

Brief history of the development of research in physics in Uzbekistan. Trudy FTI AN Uz.SSR 4:3-61 '52. (MLRA 9:1)
(Uzbekistan--Physics--Research)

Shuppe, G. N.

6

Secondary electron-ion emission of conductors (iron, tantalum, nickel, and graphite) under the bombarding action of positive mercury ions. V. I. Veksler, G. A. Klein, and G. N. Shuppe. *Trudy Fiz. Tekh. Inst., Akad. Nauk Uzbek. S.S.R.* 4, 65–76(1952); cf. *C.A.* 48, 437g.—The secondary electron emission of these materials is the result of 2 processes. The 1st one is a function of the energy of the bombarding ions, and the 2nd one is linked to the energy potential of the ion V_i and the work function Φ of the bombarded surface. For graphite the 1st process occurs practically alone. For metallic surfaces which are bombarded with slow Hg ions (approx. 100 e.v.), the secondary electron emission coeff. γ can be found from the well-known equation $\gamma = A \exp(-a\Phi)$ where A and a are consts. Another equation is $\gamma = B \exp(bV_i)$ which is true not only for the present investigations, but also for the data by Penning (*C.A.* 25, 875), on the bombarding Ni by He, Ne, or A ions. At poorly degassed or oxidized surfaces γ is much higher than at well degassed surfaces or those reduced *in vacuo*. Annealing *in vacuo* will always decrease the magnitude of γ. At really clean surfaces of the conductors γ will show the lowest possible and also stable value. The character of the curves of the secondary pos. emission K will depend both upon the material of the surface and upon the depth of penetration of the bombarding beam. If Hg ions of medium energies hit the materials under investigation, the secondary emission will consist of slow electrons and slow pos. ions. The distribution curves of the secondary electrons (by energies) has the same character for all the materials; the starting and terminal portions of all curves are practically identical. The max. in all the curves are at several e.v., with exception of graphite, where 1 e.v. is barely reached. The overwhelming majority of the secondary ions in all the materials have energies of no more than 1 e.v. Both secondary electrons and secondary ions with energies of more than 10 e.v. are exceedingly rare. The curves which show the coeff. σ of the secondary electron emission as a function of the energy of the primary electrons are similar to the curves obtained previously; the one for graphite showed consistently lower values. It is just this deviation of the graphite values which indicate that the structure of the surface is of importance to secondary emission. W. I.

(2)

SHUPPE, G.N.

USSR/Physics - Work Function, Electron Emission Jun 52

"The Work Function of Electrons on Certain Faces of a Tungsten Monocrystal," B. G. Smirnov, G. N. Shuppe, Phys-Tech Inst, Acad Sci Uzbek SSR

"Zhur Tekh Fiz" Vol XXII, No 6, pp 973-980

The work functions of electrons on the various faces of a single W crystal, fused into a spherical shape with a diam of the order of a few microns, were measured by means of self-emitted electrons. Ratio of max to min work function was found to be around 1.3; the values of work functions of faces

219T87

were found within limits of 4.2 - 5.5 ev, i.e., the difference in the work functions of various faces was over 1 ev. Indebted to N. B. Ayzenberg and B. I. Vaysberg. Received 1 Feb 52.

219T87

Shuppe, G.N.

USSR

Conversion of ions on a metal surface. V. I. Veksler and G. N. Shuppe. *Zhur. Tekh. Fiz.* 23, 1573-81(1953).—Hg^+ ions were generated by electron impact in a magnetic field in low-pressure Hg vapor. They were accelerated to 700 v. by an Al diaphragm through which they entered the high-vacuum part of the app. The ionic current of 10^{-5}–10^{-4} amp. was directed on a Mo-foil target and from there the secondary products were analyzed in a mass spectrograph calibrated by Na^+, K^+, Rb^+, and Cs^+ ions. No Hg^- ions were found in the range of primary ion energy of 50–650 e.v. and target temp. from room to the m.p. Neg. ions with the at. wts. 16 (O^-), 24 (C_2^-), 25 (C_2H^-), and 34.8 and 36.9 (Cl^- isotopes), also 18.7 (F^-), 25.9 ($C_2H_2^-$?), 32.3 (O_2^- ?), and 42.2 ($C_2H_4^-$?) were observed. The O_2 peak disappeared after good degassing of the target. A theoretical discussion of the probability of conversion of pos. ions into neg. leads to the conclusion that a conversion is possible when the bombarding ions are smaller than the target ions. The observed neg. ions are due to cathodic sputtering of neg. impurities on the surface. S. Pakswer

3000

USSR/Physics - Work function of nickel FD-593

Card 1/1 : Pub. 153-5/22

Author : Asadullin, R. and Shuppe, G. N.

Title : Electron work-function on faces of single-crystal nickel

Periodical : Zhur. tekh. fiz., 24, 205-215, Feb 1954

Abstract : Attempt to establish the sequence of electron work-functions at some of the most important faces of nickel single-crystals using crystallographic considerations, observations of emission with an electron projector, and experiments with nickel layers on plates of NaCl crystal. Indebted to N. B. Ayzenberg, I. S. Andreyev, and M. B. Ben'-yaminovich. 12 references, including 3 foreign.

Institution :

Submitted : June 17, 1953

FD-3174

USSR/Physics - Adsorption

Card 1/1 Pub. 153-4/21

Authors : Gorbatyy, N. A. and Shuppe, G. N.

Title : The question of the dependence of adsorption bonds on a metallic single crystal upon crystallographic alignments

Periodical: Zhur. tekh. fiz., 25, No 8 (August), 1955, 1364-1375

Abstract : The authors investigate the adsorption of atoms of sodium, potassium and magnesium on a fused single-crystal of tungsten during the presence of a strong electric field. They found that the adsorbed atoms of potassium form dense coverings on faces (100) and (111), attaining the ability to complete these faces. The potassium atoms either are the least active in exciting the emission of electrons in the alignment (111) of a monocrystal of tungsten, or attain a small adsorption bond with the core in this region. Adsorbed atoms of magnesium form dense coverings on the faces (100) of a single-crystal of tungsten.

Submitted : April 21, 1955

SHUPPE, G. N.

Diffusion of iron in certain metals. V. P. Vasil'ev, I. F. Kamardin, V. I. Skatskii, S. G. Chernomorchenko, and G. N. Shuppe. *Trudy Sredneaziat. Gosudarst. Univ. im. V. I. Lenina* 55, No. 12, 47–53(1955).—Oxide cathodes, as used, e.g., in ordinary vacuum tubes to give an abundant flow of electrons, are susceptible to a kind of "poisoning" by certain admixts. to the core, which seems to be connected with diffusion processes. Iron in the core is particularly harmful. Such a phenomenon is caused by a so-called blocking layer at the contact between the metal core and the semiconducting layer of oxide, and by diffusion of the impurity from the core to the oxide, throttling the emission of electrons. This action of Fe is studied in this paper by the detn. of the diffusion coeff. of Fe in the metals W, Ta, Ni, and Ag. The diffusion coeff. is $D = D_0 e^{-Q/RT}$, where D_0 is formally the diffusion coeff. at an infinitely high temp. and Q is the activation energy. D is detd. by a variant of the absorption method of Steigman, *et al.* (*C.A.* 33, 6675); the variant is necessary, because the radiation from Fe^{59} is not homogeneous but consists of 2 types of β-rays and 2 types of γ-rays; the approx. absorption function used in this paper for detg. the diffusion of the radioactive isotopes (neglecting the γ-rays) is a parabola of the 3rd order. Laminas of the metal under investigation measuring about 150 sq. mm. and up to 0.4 mm. thick, were degreased and then, by electrolysis, a 4–5 sq. mm. spot of radioactive Fe was deposited in a layer of the order of microns thick. The electrode was of graphite on which was placed a drop of $FeCl_3$. Then the lamina was placed in contact with the surface of the drop and a current of 15–30 ma. was passed for 10–20 min., the lamina washed to remove traces of $FeCl_3$ and dried. For W, the data for 4 temps. (1513, 1409, 1313, and 1210°K.) with $D = 1.4 \times 10^{-9} e^{-66,000/RT}$ gave 2.6×10^{-11}, 6.7×10^{-12}, 9.7×10^{-13}, 2.3×10^{-13} sq. cm./sec. For Ta at 4 temps. (1513, 1313, 1254, 1203°K.) with $D =$

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VASIL'EV, V.P.; KAMARDIN, I.F., ...

$6.05 \times 10^{-1}e^{-31,400/RT}$ the data gave 1.18×10^{-11}, 6.1×10^{-12}, 7.7×10^{-14}, 1.25×10^{-14}. For Ni at 3 temps. (1073, 773, 673°K.) with $D = 7.3 \times 10^{-4}e^{-13,800/RT}$ the data gave 2.63×10^{-10}, 1.64×10^{-12}, 4.0×10^{-14} sq. cm./sec., and for Ag at 3 temps. (998, 773, 573°K.) with $D = 2.03 \times 10^{-4}e^{-21,800/RT}$ the data gave 3.4×10^{-10}, 1.87×10^{-11}, 2.87×10^{-12} sq. cm./sec., which is about the same as given in the literature for the diffusion of Cu, Sb, Sn, etc., in Ag. The largest error in this method is in the detn. of the temp., which in the present instance amounts to 30°. The data are plotted with D as ordinates and reciprocal of temp. as abscissas, 4 straight lines being obtained; for comparison, a 5th line is given to show the diffusion of Fe into α-Fe.

V. H. Gottschalk

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GORBATYY, N.A.; SHUPPE, G.N.

Relationship between the adsorption bonds in metal single crystals and the crystallographic orientation (Na, K, Mg on W), Trudy SAGU no.65:55-77 '55. (MLRA 9:5)
(Adsorption) (Metallography)

SHUPPE, G. N.

Work function of the electrons from the (110) face of the tungsten single crystal and the positive surface ionization of sodium on this face. G. N. Shuppe, E. P. Sytaya, and R. M. Kadyaby. *Bull. Acad. Sci. U.S.S.R., Phys. Ser.* 20, 1035-43(1956)(English translation).—See *C.A.* 51, 6324d. B. M. D.

4E4j
4E2c
1/1

SHUPPE, G. N.

Work function of the electrons from the (110) face of the tungsten single crystal and the positive surface ionization of sodium on this face. G. N. Shuppe, E. P. Sytaya, and R. M. Kadyrov. *Izvest. Akad. Nauk S.S.S.R., Ser. Fiz.* 20, 1142–50(1956).—The work function was detd. from the thermionic emission of a recrystd. W wire heated directly with a.c. The electrons emitted in a given direction (with an angular resolution of 2°9′) were collected in a Faraday cage. The emission was taken under different angles to the W and the value corresponding to (110) could be obtained from the general symmetry of the emission picture. Richardson plots are given for (112) and (110) faces φ_{av} = 4.65–4.68, φ_{av} = 4.61. The low values were attributed to a nonuniformity of the face; the degree of nonuniformity was investigated by measuring the difference between the thermionic work function and a work function obtained from the surface ionization of Na. The angular distribution of ion current was measured in the same app., with the tube filled with Na vapor and held at 120–70°. The max. in the angular distribution of ion current fell in the min. of the electron current. From the electron-current measurements φ_{av}(el) = 4.8 ± 0.1 e.v. From ion measurements φ_{av}(ion) = 4.9–5.0 e.v. indicating spots with high work function on the surface. It can be estd. that 50% of the surface is spoiled.

S. Pakswer

SHUPPE, G.N.; TSAREV, B.M., prof., otvetstvennyy red.

[Electron emission of metal crystals] Elektronnaia emissiia metallicheskikh kristallov. Tashkent, Izdvo SAGU, 1957. 110 p. (Tashkent. Universitet. Trudy Sredneaziatskogo gosudarstvennogo universiteta, no.115. Fiziko-matematicheskie nauki, no.17)
(MIRA 11:6)

(Metal crystals) (Electron emission)

GORBATYY, N.A.; SHUPPE, G.N.

Evaporation of molybdenum and tungsten in strong electric fields.
Dokl. AN Uz. SSR no.12:13-16 '57. (MIRA 11:5)

1.Sredneaziatskiy gos. universitet im. V.I. Lenina. Predstavleno akad. AN UzSSR S.V. Starodubtsevym.
(Molybdenum--Electric properties)
(Tungsten--Electric properties)

SHUPPE, G.N.

9231. THE ELECTROSTATIC EMISSION FROM A TANTALUM SINGLE CRYSTAL.

N.A. Gorbatyi, L.V. Reshetnikova, E.P. Sytaya and G.N. Shuppe. Zh. tekh. Fiz., Vol. 27, No. 1, 196-8 (1957). In Russian.

Spherical projectors were made up with Ta points. A specimen etched with 90% HF + 10% HNO_3, used in vacuum conditions $\approx 10^{-11}$ mm Hg, heated to 2600°K, gives a picture exactly corresponding to those for W and Mo. Photographs are given for a specimen in a variety of conditions such as: insufficiently annealed, heated at 2600°K, heated to 1000-1100°K, specimen with soiled surface. Treatment of the point by a reversed field leads, in the case of Ta, to a considerable increase of emission current.

C.R.S. Masters

AUTHORS: Gofman, I.I., Smirnov, B.G., Sirin, G.S., Shuppe, G.N. 57-11-29/55

TITLE: On Electrostatic Electron Emission of Semiconductors. (K voprosu ob elektrostaticheskoy elektronnoy emissii poluprovodnikov.)

PERIODICAL: Zhurnal Tekhn.Fiz.., 1957, Vol. 27, Nr 11, pp. 2662-2663 (USSR)

ABSTRACT: Here the results of the investigation of electrostatic electron-emission on the occasion of a statical process with a non-purely metallic point of tungsten, but covered by carbide, are given. All volt-ampere characteristics of the electro-static electron-emission were of the same character. It is demonstfated that the characteri stic of the emission-current in dependence on the potential is in accordance with the theory. It can be maintained that the theory of R.Stratton (Proc.Phys.Soc.,B,68,746,1955) is qualitatively confirmed; the flections of the emission-curve characteristical for this theory have appeared in all curves of the experiments here described. There are 5 figures and 1 Slavic reference.

ASSOCIATION: Department of Electrophysics of the Central Asia State University V.I.Lenin (Kafedra elektrofiziki Sredneaziatskogo gosudarstvennogo universiteta im.V.I.Lenina)

SUBMITTED: February 8, 1957

AVAILABLE: Library of Congress.

Card 1/1

SHUPPE, G.N.; SYTAYA, Ye.P.; KADYROV, R.M.

Positive surface ionization of sodium and potassium and the electron work function of tungsten single-crystal faces (110). Trudy SAGU no.91:5-15 '57. (MIRA 11:2)

(Thermionic emission) (Tungsten)

GORBATYY, N.A.; RESHETNIKOVA, L.V.; SYTAYA, Ye.P.; SHUPPE, O.N.

Electrostatic emission from tantalum single crystals. Trudy SAGU no.91:39-42 '57. (MIRA 11:2)

(Tantalum) (Electron emission)

SOV/137-58-9-19717

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 228 (USSR)

AUTHORS: Gorbatyy, N.A., Shuppe, G.N.

TITLE: On the Problem of the Effect of a Strong Electric Field on the Resistance of Metallic Wires (K voprosu o vliyanii sil'nogo elektricheskogo polya na soprotivleniye metallicheskikh provolok)

PERIODICAL: Izv. AN Uzbek SSR. Ser. fiz.-matem. n., 1958, Nr 1, pp 65-73

ABSTRACT: An experimental investigation was conducted on the effect of a strong electrical field on the time variation in the resistance of incandescent fine W, Mo, and Ta wires. It is shown that a field of $\sim 10^6$ v/cm in a high vacuum ($\sim 10^{-8}$ mm Hg) has no effect on the resistance of Mo, Ta, and W wires and does not change their rate of evaporation. Also critically examined were the results of some works on the study of the rate of evaporation of metallic wires in a vacuum. Bibliography: 12 references.

R.O.

Card 1/1 1. Electric wire--Resistance 2. Electric fields--Applications

57-28-3-26/33

AUTHORS: Gorbatyy, N. A., Shuppe, G. N.

TITLE: On the Influence of a Strong Electric Field ($\sim 10^6$ V/cm) Upon the Evaporation and the Resistance of Metals (Mo, Ta, W) (K voprosu o vliyanii sil'nogo elektricheskogo polya ($\sim 10^6$ v/sm) na ispareniye i soprotivleniye metallov (Mo, Ta, W)

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1958, Vol. 28, Nr 3, pp. 623-635 (USSR)

ABSTRACT: In view of the contradictions in the data on the influence of electric fields upon the evaporation and the resistance of metals the authors according to different methods investigated the problem of the influence exerted by strong fields upon the evaporation of metals on good vacuum conditions and, insofar as the control of the increase in resistance is one of the most wide spread methods for the control of the evaporation of metallic wire, they also dealt with the problem of the influence of electric fields upon the resistance of the metals. The equipment and the electric circuit diagram of the testing plant are described. On the basis of the experiments described here the

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On the Influence of a Strong Electric Field ($\sim 10^6$ V/cm) 57-28-3-26/33
Upon the Evaporation and the Resistance of Metals (Mo, Ta, W)

following is stated: 1) The direct measurements of the evapo= rated substance by weighing and according to the method of mar= ked atoms showed that heterogeneous electric fields with a vol= tage of the order of magnitude of 10^6 V/cm in a good vacuum ($\sim 10^{-6}$ mm of mercury column) do not influence the evaporation velocity of molybdenum, tantalum and tungsten wires. This con= clusion is also confirmed by the absence of an influence of strong fields upon the velocity of the increase of the resistance of molybdenum, tantalum and tungsten wires annealed in a good vacuum. 2) Strong electric fields (up to $2{,}6 \cdot 10^6$ V/cm) do not change the magnitude of the resistance of the metallic filaments. 3) According to the method of marked atoms the heat of evapora= tion of tungsten and tantalum as well as the velocities of evapo= ration at a number of temperatures were measured. The obtained data are in agreement with the data known from publications. 4) The modifications observed in the voltage drop at the fila= ments on the application of a strong electric field are caused by the presence of parasitic currents in the devices. (Mainly by the electrostatic emission from the pointed electrode edges). A careful analysis of the electric circuit diagrams of references 1, 2, 6 and 7 and of the construction of the devices used could in every individual case reveal the cause for the evident min=

Card 2/3

On the Influence of a Strong Electric Field ($\sim 10^6$ V/cm) Upon the Evaporation and the Resistance of Metals (Mc, Ta, W) 57-28-3-26/33

consistencies". Good vacuum conditions and the elimination of losses of any kind in general could eliminate any "inconsistencies" in the above-mentioned references.
There are 11 figures, 5 tables, and 11 references, 2 of which are Soviet.

ASSOCIATION: Sredneaziatskiy gosuniversitet, Kafedra elektrofiziki. Tashkent. (Tashkent, Central Asiatic State University, Chair for Electrophysics)

SUBMITTED: June 1, 1957.

: 1. Metals--Vaporization 2. Metals--Resistance 3. Electric fields--Properties

Card 3/3

SHUPPE, Georgiy Nikolayevich (Central Asiatic State Univ im Lenin) for Doc Phys Math Sci on the basis of dissertation defended 18 Nov 59 in Council of Mos Order of Lenin and Order of Labor Red Banner State Univ im Lomonosov, entitled "Electronic emission of metallic crystals." (BMVSSO USSR, 1-61, 26)

SHUPPE, G. N., Doc Phys-Math Sci (diss) -- "Electron emission of metallic crystals. Part 1: Pure monocrystals. Part 2: Monocrystals with films of foreign atoms". Moscow, 1959. 19 pp (Moscow Order of Lenin and Order of Labor Red Banner State U im M. V. Lomonosov), 150 copies (KL, No 20, 1959, 108)

SOV/166-59-6-9/11

24(3)
AUTHORS: Gofman, I.I., Protopopov, O.D., Shuppe, G.N.

TITLE: Investigation of the Electrostatic Emission of Electrons (EEE) From a Wolframite Emitter Under Impulse Conditions

PERIODICAL: Izvestiya Akademii nauk Uzbekskoy SSR, Seriya fiziko-matematicheskikh nauk, 1959, Nr 6, pp 72 - 77 (USSR)

ABSTRACT: The authors consider impulse measurements of the electrostatic emission of electrons and compare their method and results with the papers of Dyke and others [Ref 3,4,6] and of Barbour and Dolan [Ref 5]. In these papers it is assumed that the emission current is $i_e = \frac{u_2}{R_o}$, where u_2 is the voltage drop on the resistance R_o obtained from the oscillogram. The authors show that this method for calculating i_e can cause essential errors. The relation $u_2 = i_e R_o$ holds with high exactness only at the end of the impulse, if its duration is sufficiently long. Accordingly the volt-ampere characteristics stated by the authors at a

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SOV/166-59-6-9/11

Investigation of the Electrostatic Emission of Electrons (EEE) From a Wolframite Emitter Under Impulse Conditions

wolframite emitter show essential deviations from those given in [Ref 3 - 6]. There are 6 figures, and 6 references, 2 of which are Soviet, and 4 American.

ASSOCIATION: Sredneaziatskiy gosuniversitet imeni V.I. Lenina (Central Asian State University imeni V.I. Lenin)

SUBMITTED: August 20, 1959

Card 2/2

S/058/61/000/004/023/042
A001/A101

9,3130
26.2312

AUTHOR: Shuppe, G.N.

TITLE: Electronic emission of metallic crystals

PERIODICAL: Referativnyy zhurnal. Fizika, no 4, 1961, 342, abstract 4Zh6 ("Tr. Sredneaz. un-ta", 1959, no 147, 203, 111.)

TEXT: This is a monograph dealing with emission of charged particles from metallic single crystals, both pure and coated with films of dissimilar atoms; the author surveys systematically and almost completely (up to the middle of 1958) materials available in the literature on this problem; he evaluates them and describes and generalizes the results of investigations carried out under his supervision. A special attention is paid in the work to processes which result in changes of polycrystalline emitters, during their service life, into single crystal specimens; the other special problems are: dependence of electron and ion emission from metallic surfaces on crystallographic directions, and dependences of adsorption phenomena and courses of chemical reactions on faces of crystals, which are revealed during the studies. The first part of the work is devoted to electronic emission from pure surfaces of metallic single crystals (see RZhFiz,

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Electronic emission of metallic crystals

S/058/61/000/004/023/042
A001/A101

1959, no 3, 6128), and the second part to emission from metallic single crystals with films of dissimilar atoms (see abstract 4Zh7). The monograph is intended for wide circles of workers of scientific-research institutes, laboratories and industrial enterprises, who work in the fields of physics, manufacture and application of electric vacuum devices. There are 234 references. See also RZhFiz, 1960, no 1, 1466.

[Abstracter's note: Complete translation.]

Card 2/2

SHUPPE, G.N.

Study of cathode electronic carried out at the physics departments of the State University of Central Asia. (MIRA 13:7)
Trudy SAGU no.148:3-7 '59.
(Cathodes) (Electron tubes)

S/058/61/000/004/024/042
A001/A101

AUTHORS: Shuppe, G.N., Zakirov, N.Z.

TITLE: Dependence of adsorption on metal single crystals upon crystallographic directions

PERIODICAL: Referativnyy zhurnal. Fizika, no 4, 1961, 342, abstract 4Zh7 ("Tr. Sredneaz. un-ta", 1959, no 148, 45 - 80)

TEXT: This is a survey of works published up to 1958 which deal with studies of thermoionic and autoelectronic emissions of metallic single crystals coated with adsorbed films. The authors make an attemot of interpreting experimental results based on crystallogeometric concepts. There are 37 references.

V. Gavrilyuk

[Abstracter's note: Complete translation.]

Card 1/1

81655

S/181/60/002/06/45/050
B006/B056

24.2400

AUTHORS: Gofman, I. I., Protopopov, O. D., Shuppe, G. N.

TITLE: Investigation of the Electrostatic Electron Emission From a Tungsten Emitter in Pulsed Operating Conditions

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 6, pp. 1323-1327

TEXT: The pulsed electrostatic electron emission from pure tungsten emitters has already repeatedly been investigated for the purpose of verifying the quantum-mechanical theory of this emission at high current densities. However, the peculiarities occurring in pulsed operation are not sufficiently considered, so that some of the data were found to be faulty. The present paper contains a detailed discussion of the measuring methods, results of the authors' own measurements, and a summary of results. The square pulses used in the so-called pulse measuring method have a duration of 10^{-6} sec; such a pulse is used for the purpose of determining each individual point of the current-voltage characteristic. Fig. 1 shows a general wiring diagram such as is used

Card 1/3

Investigation of the Electrostatic Electron Emission From a Tungsten Emitter in Pulsed Operating Conditions

S/181/60/002/06/45/050
B006/B056

for such measurements. According to the method described measurements were carried out both statically (range of low amperages) and by the pulse method (range of high amperages). The experiments were carried out in projectors with a luminescence screen for the purpose of observing the emission picture also in lamps with a pure metallic anode. The pressure in the measurements was of the order of 10^{-10} torr. A specially constructed impulse generator was used, which maintained the voltage on the pulse-height plateau (1-2 μsec) constant with an accuracy of 0.1%. A two-ray oscilloscope was used for pulse-recording. Some ten characteristics were recorded; one of them is shown in Fig. 3. Fig. 4 contains a number of oscillograms showing points A - E of the current-voltage characteristic. Fig. 5 shows a dark photograph of the emitter in the electron microscope (1:10^7). A qualitative comparison between the experimental results and the electrostatic electron emission equations is carried out, a) for the case of a square barrier, b) under the assumption of a barrier rounded off by the forces of the electric image, and c) corresponding to the many-electron problem with the

Investigation of the Electrostatic Electron Emission From a Tungsten Emitter in Pulsed Operating Conditions

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correction according to A. S. Kompaneyets. It is shown that for a spherically distributed space charge, the course of the experimental current-voltage characteristics always corresponds to case c). There are 6 figures and 9 references: 5 Soviet and 4 American.

ASSOCIATION: Sredneaziatskiy gosudarstvennyy universitet Tashkent
(Central Asia State University Tashkent)

SUBMITTED: September 17, 1959

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S/109/60/005/07/013/024
E140/E163

9.3120

AUTHORS: Shuppe, G.N., and Vasil'yev, V.P.

TITLE: The Application of Radioactive Isotopes to the Study of Oxide-Cathode Processes and Certain Other Problems of Cathode Electronics

PERIODICAL: Radiotekhnika i elektronika, Vol 5, No 7, 1960, pp 1135-1144 (+ 1 plate) (USSR)

ABSTRACT: Work carried on at the Central-Asia University and the Tashkent vacuum-tube factory using radioactive isotopes is described. The following problems are investigated: evaporation of pure metal cathodes; diffusion of iron in Ni, W, Ta and Ag; alkali-earth metal diffusion (Ca) in Ni, Ag, Au and bronze; diffusion processes; evaporation of oxide layers and getters in vacuum tubes; nickel migration in an oxide cathode; barium diffusion in the cathode oxide coating. Using activity counters and autoradiogram photographs, it is found that the processes occurring are more complex than has been suspected and that cathode and getter elements migrate over practically all the other tube elements except the heater in indirectly heated tubes. In the majority of cases industrially produced types have been

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The Application of Radioactive Isotopes to the Study of Oxide-Cathode Processes and Certain Other Problems of Cathode Electronics

used, with radioactivity induced in selected tube parts by the use of radioisotope admixtures or neutron bombardment of the part before assembly.
There are 10 figures, 3 tables and 16 Soviet references.

SUBMITTED: January 3, 1960

Card 2/2

S/139/61/000/006/008/023
E032/E514

AUTHORS: Sytaya, Ye.P. and Shuppe, N.G.

TITLE: Ionization of iodine atoms at a hot tantalum surface

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, no 6, 1961, 52-56 + 1 plate

TEXT: The authors report an investigation of surface ionization of iodine on tantalum. A special study was made of the effect of the "ageing" of the surface. The ion emission was observed with the aid of the magnetron method. The experimental tube was in the form of a triode whose cylindrical anode was divided into three parts (tantalum). The filament (150-250 u) and the grid were coaxial with the anode. Only the middle part of the anode was used, the two outer parts served as guard rings. The device was first baked and evacuated to a pressure of 10^{-8} mm Hg Electrons were removed by a magnetic field parallel to the filament The electron and ion currents were measured by a mirror galvanometer with a sensitivity of $2 \cdot 10^{-9}$ A/div. The ion currents were measured for a tantalum filament at iodine vapour pressures between $2.7 \cdot 10^{-2}$ and $5 \cdot 10^{-5}$ mm Hg in the temperature range 1600 to

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2500°K. Comparison of the experimental results with the Saha equation showed that the surface ionization of the iodine atoms does not occur over the entire polycrystalline surface; it occurs only at certain spots on the surface which have low work functions Measurements were also made of the work function and Richardson's constant of tantalum. The results for 150 μ diameter wire (0.001% Fe, 0.01% Nb, traces of Cu) are shown in Table 2.

Table 2

φ^{**} eV	A^{**} A/deg^2 cm^2	Heat treatment
4.42 ± 0.02	82	Temperature raised from 800 to 2500°K in 5 hours, followed by heating at 2000°K and 10^{-8} mm Hg for 20 hours
4.14 ± 0.02	106	Further heating for 30 hours at 2300°K.

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S/058/61/001/000/027/056
B104/B138

9,3120 (1003, 1138, 1160)

AUTHORS: Shuppe, G. N., Vasil'yev, V. P.

TITLE: Use of radioisotopes in certain fields of cathode electronics

SOURCE: Tashkentskaya konferentsiya po mirnomy ispol'zovaniyu atomnoy energii. Tashkent, 1959. Trudy, v. 1. Tashkent, 1961, 182 - 191

TEXT: Processes in oxide cathodes have been studied in recent years by means of tagged atoms at the Kafedra elektrofiziki TashGU (Department of Electrophysics of the Tashkent State University) and the Tashkentskiy elektrolampovom zavod (Tashkent Electrontube Plant). The evaporation rates of tantalum and tungsten were investigated. 46.7 and 43.3μ thick wires were enriched with Ta^{182} and W^{185}, pressure was 10^{-8} mm Hg. In the range 2070 - 2400°K, the evaporation rate of Ta was $5.9 \cdot 10^{-12}$ - $2.7 \cdot 10^{-9}$ g/cm^2.sec. The evaporation rate of tungsten in the temperature range 2400 - 2800°K was between $4.5 \cdot 10^{-10}$ and $1.1 \cdot 10^{-7}$ g/cm^2.sec.

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Use of radioisotopes in...

The evaporation heat of Ta was -8.02 ev/atom, that of [illegible], -8.10 ev/atom. The diffusion of Fe in Ni, W, Ta, and Ag was studied by means of the isotope Fe^{59}. Diffusion heating was carried out in a furnace at $1 \cdot 10^{-5}$ mm Hg. Results: The diffusion coefficient D_o in Ni was $7.5 \cdot 10^{-4}$ cm^2/sec, in W, $1.4 \cdot 10^{-2}$ cm^2/sec, in Ta, 0.5 cm^2/sec, and in Ag, $2 \cdot 10^{-5}$ cm^2/sec. The diffusion coefficient of Ca in various metals was determined with Ca^{45}. D_o in Ni was $2 \cdot 10^{-2}$, in Ag, $1.5 \cdot 10^{-1}$, in Au, $5.8 \cdot 10^{-6}$, in bronze (with 5% Al), $2.4 \cdot 10^{-4}$ cm^2/sec. A device is described for continuous measurements during diffusion processes. A sample with a radioactive preparation on its surface is heated in vacuo. The change in intensity of radioactive radiation is measured by an end-window counter through a glass window. On a 6П3С (6PZS) tetrode having a radioactive barium-oxide coated cathode (Ba^{140}), it was found that evaporation products precipitated on all tube parts, thus considerably changing the properties of the tube. Ni precipitates on parts of a Г-807 (G-807) tube do not come from the oxide layer of the cathode in which Ni is also contained, they migrate through the oxide film. Conversely, substances of grids,

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Use of radioisotopes in...

heat conductors, etc. also precipitate on the cathode. The application of autoradiography to investigations of oxide cathodes provides the possibility of obtaining quantitative and qualitative results regarding the distribution of the substances investigated. There are 10 figures, 3 tables, and 16 Soviet references.

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SHUPPE, G.N.; KOMPANEYETS, A.S.

Concerning V.A. Gor'kov's article "The first symposium on field emission." Radiotekh. i elektron. 7 no.9:1686 S '62. (MIRA 15:9)

(Field emission) (Gor'kov, V.A.)

L 26668-65 EWT(m)/EWA(d)/EWP(t)/T/EWP(b) IJP(c) MJW/JD/JG

ACCESSION NR: AP5003314 S/0166/64/000/006/0074/0078

29
19
B

AUTHORS: Imangulova, N. G.; Sytaya, Ye. P.; Shuppe, G. N.

TITLE: Adsorption of barium on tungsten wires made incandescent by alternating or direct current

SOURCE: AN UzSSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, no. 6, 1964, 74-78

TOPIC TAGS: barium, tungsten, metal sputtering, surface adsorption, work function

ABSTRACT: The investigations were made in instruments comprising diodes with cylindrical slotted anodes, as shown in Fig. 1 of the enclosure. A polished tungsten wire (grade VA-3) 11--12 cm long was stretched along the axis of the diode. The barium sources were molybdenum vessels filled with barium-beryllate powder. The initial vacuum was 2--5 x 10^{-8} mm Hg and was reduced to 2--3 x 10^{-9} mm Hg

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